

Kyra J Becker

EDUCATION

St. Mary's College of Maryland, St. Mary's City MD

Virginia Tech, Blacksburg VA

Degree: BS, Biology; Summa Cum Laude

Duke University School of Medicine, Durham NC

Degree: MD

POSTGRADUATE TRAINING

Intern, Internal Medicine; Johns Hopkins Hospital

Baltimore, MD

Resident, Neurology; Johns Hopkins Hospital

Baltimore, MD

Clinical Fellow, Critical Care Neurology; Johns Hopkins Hospital

Baltimore, MD

Research Fellow; NIH, NINDS, Stroke Branch

Bethesda, MD

POSITIONS

1995-1996 Attending Neurologist, Greenbelt Neurological Associates
Greenbelt, MD

1996-2001 Assistant Professor of Neurology and Neurological Surgery
University of Washington School of Medicine; Seattle, WA

1996-Present Co-director, University of Washington Stroke Center

2002-Present Associate Professor of Neurology and Neurological Surgery
University of Washington School of Medicine; Seattle, WA

HONORS AND AWARDS

CRC Press Freshman Chemistry Achievement Award

Phi Beta Kappa, Virginia Tech

Phi Kappa Phi "First in College" Award, Virginia Tech

Alpha Omega Alpha, Duke University Medical School

The American Medical Women's Award, Duke University Medical School

Hewlett-Packard Medical Graduate Award, Duke University Medical School

Eleanor Naylor Dana Award for Fellowship in Critical Care Neurology
 Robert G. Siekert New Investigator Award in Stroke, American Heart Association, 1997
 University of Washington Department of Neurology Teaching Award, 2002

BOARD CERTIFICATION

Diplomate, American Board of Neurology and Psychiatry

CURRENT LICENSES

Washington

PROFESSIONAL ORGANIZATIONS and RESPONSIBILITIES

1993-present	American Academy of Neurology	
	Critical Care and Emergency Neurology Section, Member	1997-
	Course Director: Neurology of Critical Illness	1998-2001
	Stroke Section, Member	1999-
	Executive Committee	2002-
	Course Lecturer: Hematologic Causes of Stroke	2002-
1997-present	International Society of Cerebral Blood Flow and Metabolism	
1997-present	American Stroke Association	
	Member, Stroke Council	1997-
	Member, Executive Committee, Affiliate Liaison Council	1999-2001
	Member, Stroke Council Membership Committee	2001-
	Abstract Grader, International Stroke Conference	2000-
1999-present	President, Puget Sound Stroke Interest Group	
1999-2002	Life Center NorthWest	
	Member, Board of Directors	
2000-present	American Stroke Association - Operation Stroke	
	Chair, Professional Education Committee	
2000-present	Cardiovascular Collaborative Clinical Leadership Group	
2000-present	Hazel K. Goddess for Stroke Research in Women	
	Member, Medical Advisory Board	
2001-present	American Association of Immunologists	

***AD HOC* REVIEWER**

Glia
Stroke
Neurology
Annals of Neurology
Critical Care Medicine
Journal of Neuroimaging

Journal of Neuroimmunology
American Journal of Physiology
Journal of the Neurological Sciences
Journal of Laboratory and Clinical Medicine
Journal of the American Medical Association
Journal of Cerebral Blood Flow and Metabolism
Institute for Laboratory Animal Research (ILAR) Journal

NATIONAL and INTERNATIONAL RESPONSIBILITIES

2000-present	Neurological Devices Panel of the Medical Devices Advisory Committee, Center for Devices and Radiological Health, Food and Drug Administration Member
2002-present	Editorial Board, <i>Stroke</i> Member
2002-present	Editorial Board, <i>Neurocritical Care</i> Member

LOCAL RESPONSIBILITIES

1996-present	Critical Care Advisory Committee, Harborview Hospital
1998-present	Medical Director, Stroke Unit, Harborview Hospital

PEER REVIEWED PUBLICATIONS

1. Sundar SK, **Becker KJ**, Cierpial MA, Carpenter MD, Rankin LA, Fleener SL, Ritchie JC, Weiss JM. Intracerebroventricular infusion of interleukin-1 rapidly decreases peripheral cellular immune responses. *Proc Natl Acad Sci USA* 86:6398-6402, 1989.
2. Weiss JM, Sundar SK, **Becker KJ**, Cierpial MA. Behavioral and neural influences on cellular immune responses: Effects of stress and interleukin-1. *J Clin Psychiatry* 50(Suppl):43-53; 1989.
3. **Becker KJ**, Monsein LH, Ulatowski J, Mirski M, Williams M, Hanley DF. Intra-arterial thrombolysis in vertebrobasilar occlusion. *AJNR* 17:1-8, 1996.
4. **Becker KJ**, Purcell LL, Hacke W, Hanley DF. Vertebrobasilar thrombosis: diagnosis, management, and the use of intra-arterial thrombolytics. *Crit Care Medicine* 24:1729-1742, 1996.
5. **Becker KJ**, Crain BJ, Monsein LH, Pappalardo PA, Hanley DF. Arterial changes following thrombolysis and percutaneous transluminal angioplasty in vertebrobasilar thrombosis. *AJNR* 18:514-518, 1997.
6. **Becker KJ**, McCarron R, Ruetzler C, Laban O, Flanders K, Sternberg E, Hallenbeck JM. Immunologic tolerance to myelin basic protein decreases stroke size in transient focal cerebral ischemia. *Proc Natl Acad Sci USA* 94:10873-10878, 1997.
7. **Becker KJ**. Inflammation and acute stroke. *Current Opinions in Neurology*. 11:45-49; 1998.

8. Brambrink A, Martin LJ, Hanley DF, **Becker KJ**, Koehler RC, Traystman RJ. Effects of the AMPA receptor antagonist NBQX on the outcome of newborn pigs after asphyxic cardiac arrest. *J Cereb Blood Flow Metabol* 19:927-938, 1999.
9. **Becker KJ**, Baxter AB, Bybee HM, Tirschwell DL, Abouelsaad T, Cohen WA. Active extravasation of contrast is an independent predictor of death in primary intracerebral hemorrhage. *Stroke* 30:2025-2032, 1999.
10. Olsen AA, Ottenlips JR, Douville CM, Grant GA, Moore AE, **Becker KJ**, Winn HR, Newell DW. Use of cerebral vasoreactivity testing in the evaluation of moyamoya disease. *J Vasc Tech* 24:163-168, 2000.
11. Goldstein LB, Adams R, **Becker KJ**, Furberg CD, Gorelick PB, Hademenos G, Hill M, Howard G, Howard V, Jacobs B, Levine SR, Mosca L, Sacco RL, Sherman DG, Wolf PA, del Zoppo GJ. Primary Prevention of Ischemic Stroke : A Statement for Healthcare Professionals From the Stroke Council of the American Heart Association. *Stroke*. 32: 280-299, 2001.
12. del Zoppo GM, **Becker KJ**, Hallenbeck JM. Inflammation after stroke: Is it harmful? *Archives of Neurology*. 58:669-672, 2001.
13. **Becker KJ**. Targeting the CNS Inflammatory Response in Ischemic Stroke. *Current Opinions in Neurology*. 14:349-353, 2001.
14. **Becker KJ**, Fruin MS, Gooding TD, Tirschwell DL, Love PJ, Mankowski TM. Community-based education improves stroke knowledge. *Cerebrovascular Diseases* 11:34-43, 2001.
15. **Becker KJ**, Kindrick D, Relton J, Harlan JM, Winn RK. Antibody to the α_4 integrin decreases infarct size in transient focal cerebral ischemia. *Stroke*. 32: 206-211, 2001.
16. **Becker KJ**, Baxter AB, Cohen WA, Tirschwell DL, Bybee HM, Newell DW, Winn HR, Longstreth WT Jr. Withdrawal of support in intracerebral hemorrhage leads to self-fulfilling prophecies. *Neurology* 56: 766-772, 2001.
17. Tirschwell DL, Coplin WM, **Becker KJ**, Vogelzang P, Eskridge J, Haynor D, Cohen W, Newell DW, Winn HR, Longstreth WT Jr. Intra-arterial urokinase for acute ischemic stroke: factors associated with significant complications. *Neurology* 57:1100-1103, 2001.
18. **Becker KJ**. Targeting the central nervous system inflammatory response in ischemic stroke. *Curr Opin Neurol* 14:349-353, 2001.
19. **Becker KJ**, Tirschwell DL. Ensuring Patient Safety in Clinical Trials for Treatment of Acute Stroke. *JAMA* 286:1-2, 2001.
20. **Becker KJ**, Tirschwell DL. Letter to the Editor. *JAMA* 287:987, 2002.
21. **Becker KJ**. Anti-leukocyte Antibodies: LeukArrest (Hu23F2G) and Enlimomab (R6.5) in Acute Stroke. *Current Medical Research and Opinion*. 18, Suppl 2: s20-s24, 2002.
22. **Becker KJ**, Kindrick D, Kim Y, McCarron R, Hallenbeck JM, Winn R. Adoptive transfer of MBP-tolerized splenocytes to naïve animals reduces infarct size: A role for lymphocytes in ischemic brain injury? Accepted for publication. *Stroke*.
23. Takeda H, Spatz M, Ruetzler C, McCarron R, **Becker K**, Hallenbeck J. Induction of mucosal tolerance to E-selectin prevents ischemic and hemorrhagic stroke in spontaneously hypertensive, genetically stroke prone rats. *Stroke* 33:2156-2164, 2002.
24. Tirschwell DL, Longstreth WT Jr, **Becker KJ**, Gammans RE Sr, Sabounjian LA, Hamilton S, Morgenstern LB. Shortening the NIH Stroke Scale for Use in the Prehospital Setting. *Stroke* 33:2801-2806, 2002.

25. **Becker KJ**, Skalabrin E, Hallam D, Gill EA. Is sexual intercourse a risk factor for stroke? Submitted for publication.
26. **Becker KJ**, Kindrick DL, Ye ZC. Sensitization to Brain Antigens Following Stroke is Augmented by Lipopolysaccharide. Manuscript in preparation.

CHAPTERS

1. Weiss JM, Sundar SK, **Becker KJ**. Stress-Induced Immunosuppression and immunoenhancement: Cellular immune changes and mechanisms. In Goetzl EJ and Spector NJ (eds): *Neuroimmune Networks: Physiology and Disease*. New York, Alan R. Liss. pp 193-206; 1989.
2. **Becker KJ**, Ulatowski J. Approach to the comatose patient. Johnson RT, Griffin JW (eds); *Current Therapy in Neurologic Disease*, Fifth Edition, Mosby-Year Book, Inc: New York, NY. pp 1-4, 1997.
3. **Becker KJ**, Schwarz S, Hacke W, Hanley DF. Coma. Bogousslavsky J and Fisher M (eds); *Textbook of Neurology, First Edition*. Butterworth-Heinemann: Boston, MA. pp 205-217, 1998.
4. **Becker KJ**, Hallenbeck JM. Reducing Neuroinflammation. For Marcoux FW and Choi DW (eds); *Handbook of Experimental Pharmacology: CNS Neuroprotection*. Springer-Verlag: Berlin, Germany. pp 65-81, 2002.
5. **Becker KJ** Tirschwell DL. Intracerebral Hemorrhage. In Johnson RT, Griffin JW (eds); *Current Therapy in Neurologic Disease: Sixth Edition* 209-214; 2002.
6. **Becker KJ**. Contributor to *Q&A Color Review of Clinical Neurology and Neurosurgery*. Thieme: New York, NY. 2003.

SOLICITED ARTICLES

1. **Becker KJ**. Emerging medical therapy for acute stroke. *Topics in Emergency Medicine* 19:1-10; 1997.
2. **Becker KJ**. Vertebrobasilar ischemia. *New Horizons: The Science and Practice of Acute Medicine* 5:305-316; 1997.
3. **Becker KJ**. Epidemiology and clinical presentation of subarachnoid hemorrhage. In Winn HR and Le Roux PD (eds); *Neurosurgery Clinics of North America; Current Management of Cerebral Aneurysms: Part I*. 9:435-444; 1998.
4. **Becker KJ**. Thrombolysis for acute stroke. In Odderson I (ed); *Rehab Clinics of North America*. 10:773-785; 1999.
5. **Becker KJ**. ICU Management of stroke. In Morgenstern L (ed); *Neurology Clinics of North America*. 18:434-454; 2000.
6. **Becker KJ**. Management of acute stroke. *Healthology*. May 2000. http://www.healthology.com/focus_article.asp?f=stroke&c=manage_acutestroke1.
7. **Becker KJ**. Book Review: "Emergency Neurology: Principles and Practice" (Shah SM and Kelly KM, eds.) for *Annals of Neurology*. 48:133-134; 2000.
8. **Becker KJ**. Book Review. "Brain Injury" (Clark SB and Kochanek P, eds) for *The Lancet Neurology*. 1:134, 2002.

9. **Becker KJ.** What's the connection between PFO and cryptogenic stroke? *Practical Neurology.* 2:56-57, 2003.

ABSTRACTS

1. **Becker KJ,** Monsein L, Hanley D. Local intra-arterial thrombolysis for vertebrobasilar occlusion. Eastern Neuroradiological Society 6th Annual Meeting, September 1994.
2. **Becker KJ,** Monsein LH, Hanley DF. Retrombosis after successful thrombolysis of the vertebrobasilar system. 20th International Joint Conference on Stroke and Cerebral Circulation, February 1995.
3. Brambrink AM, Hanley DF, Shaffner HD, **Becker KJ,** Martin LJ, Koehler RC, Traystman RJ. Effects of AMPA receptor antagonist NBXQ on neurologic outcome and neuropathology after asphyxial cardiac arrest in neonatal pigs. 20th International Joint Conference on Stroke and Cerebral Circulation, February 1995.
4. **Becker KJ,** Martin LJ, Hanley DF. Invasion of systemic mononuclear cells occurs within 24 hours after transient but not permanent ischemia. XVIIth International Symposium on Cerebral Blood Flow and Metabolism, July 1995.
5. Brambrink AM, Hanley DF, Goel V, Shaffner HD, **Becker KJ,** Martin LJ, Thakor N, Koehler RC, Traystman RJ. Effect of the AMPA receptor antagonist NBXQ 2,3-dihydroxy-6-nitro-7-sulfonylbenzo(F)quinoxaline on EEG, neurologic outcome, and histopathology after asphyxial cardiac arrest in neonatal pigs. XVIIth International Symposium on Cerebral Blood Flow and Metabolism, July 1995.
6. **Becker KJ,** Crain BJ, Monsein LH, Pappalardo PA, Hanley DF. Arterial changes following thrombolysis and percutaneous transluminal angioplasty in vertebrobasilar thrombosis. First annual meeting of Emergency and Critical Care of Acute Stroke, September 1996.
7. **Becker KJ,** McCarron RM, Hallenbeck JM. Oral tolerance to myelin basic protein decreases stroke size. 22nd International Conference on Stroke and Cerebral Blood Flow, February 1997.
8. **Becker KJ,** McCarron RM, Reutzler C, Laban O, Sternberg E, Flanders K, Hallenbeck JM. Antigen specific modulation of the immune response improves outcome after transient focal cerebral ischemia. XVIIIth International Symposium on Cerebral Blood Flow and Metabolism, July 1997.
9. **Becker KJ,** McCarron RM, Hallenbeck JM. Magnitude of fever predicts outcome after transient middle cerebral artery occlusion. 23rd International Conference on Stroke and Cerebral Blood Flow, February 1998.
10. **Becker KJ,** Baxter AB, Bybee HM, Tirschwell DL, Cohen WA. Active extravasation of contrast is an independent predictor of death in primary intracerebral hemorrhage. 24th International Conference on Stroke and Cerebral Blood Flow, February 1999.
11. **Becker KJ,** Fruin MS, Gooding TD. Community knowledge of stroke in King County Washington, 24th International Conference on Stroke and Cerebral Blood Flow. February 1999.
12. Gray F, Olsen A, Douville CM, Newell DW, **Becker KJ.** Clinical characteristics of patients with transcranial Doppler evidence of emboli. 24th International Conference on Stroke and Cerebral Blood Flow, February 1999.

13. **Becker KJ**, March KS, Newell DW, Lam AM. Changes in brain tissue StO₂ parallel changes in MCA flow velocity in response to hypercapnia but not hyperventilation. XIXth International Symposium of Cerebral Blood Flow, Metabolism and Function, June 1999.
14. Olsen AA, Ottenlips JR, Douville CM, Grant GA, Moore AE, **Becker KJ**, Winn HR, Newell DW. Use of cerebral vasoreactivity testing in the evaluation of moyamoya disease. Society of Vascular Technology 22nd Annual Conference, August 1999.
15. **Becker KJ**, Kindrick DL, Kim Youjeong. Adoptive transfer of MBP-tolerized splenocytes decreases infarct size following transient focal cerebral ischemia. 25th International Conference on Stroke and Cerebral Blood Flow, February 2000.
16. **Becker KJ**, Baxter AB, Bybee HM, Cohen WA. The decision to withdrawal medical support in intracerebral hemorrhage may lead to self-fulfilling prophecies. 25th International Conference on Stroke and Cerebral Blood Flow, February 2000.
17. Tirschwell DL, Longstreth WT Jr, **Becker KJ**, Gammans RE, Sabounjian LA, Morgenstern LB. Shortening the National Institutes of Health Stroke Scale for use in the prehospital Setting. 52nd Annual Meeting of the American Academy of Neurology, May 2000.
18. Hawkins IS, **Becker KJ**. Dietary behaviors of ambulatory care stroke patients. 26th International Conference on Stroke and Cerebral Blood Flow, February 2001.
19. Uchino K, Johnston SC, **Becker KJ**, Tirschwell DL. Epidemiology of moyamoya disease in Washington State and California. 53rd Annual Meeting of the American Academy of Neurology, May 2001.
20. **Becker KJ**, Kindrick DL. Dynamic Fluxes in Lymphocyte Subsets Accumulating Within Ischemic Brain. 27th International Conference on Stroke and Cerebral Blood Flow, February 2002.
21. **Becker KJ**, Kindrick DL. Inflammation and antigen specific responses to brain after stroke. 27th International Conference on Stroke and Cerebral Blood Flow, February 2002.
22. **Becker KJ**. Lymphocyte Mediated Cerebral Ischemic Injury. 23rd Princeton Conference, March 2002.
23. **Becker KJ**, Kindrick DL, Hallenbeck JM, McCarron RM, Winn RK. Modulation of the Post-Ischemic Immune Response Improves Outcome in Focal Cerebral Ischemia: A Role for Lymphocytes in Stroke? Fifth International Workshop in Maturation Phenomenon, April 2002.
24. **Becker KJ**, Kindrick DL. Sensitization to Brain Antigens Following Stroke. 28th International Conference on Stroke and Cerebral Blood Flow, February 2003.
25. **Becker KJ**, Fruin MF. Patent Foramen Ovale and Hypercoagulable States in Stroke - Any Correlation? 27th International Conference on Stroke and Cerebral Blood Flow, February 2002.

PATENTS

2000: "Increased Resistance to Stroke by Developing Immunologic Tolerance to Myelin or Components Thereof". Patent No. 6,068,844; Awarded: May 30, 2000

RESEARCH and CONTRACT FUNDING

Active:

Primary Investigator: The Role of Lymphocytes in Cerebral Ischemic Injury.
NIH KO2 NS02160-01
4/2000 – 4/2005

Primary Investigator: NIRS in Acute Stroke; sponsored by ---11/2002 – 11/2004

Primary Investigator: MATCH Study; “Management of Atherothrombosis with Clopidogrel in High-Risk Patients with Recent Transient Ischemic Attack or Ischemic Stroke”; sponsored by ---10/2001 – 10/2004

Primary Investigator: A Phase II, Randomized, Double-Blind, Placebo-Controlled, Escalating Dose Study of the Safety and Tolerability of SUN N4057 Administered for 72 Hours by Continuous Intravenous Infusion in Successive Cohorts of Patients with Acute Ischemic Stroke (Protocol #SPI-102); sponsored by --- 4/2002 –

Co-Investigator: “Psychosocial/Behavioral Intervention in Post Stroke Depression”; sponsored by the National Institutes of Health.
PA-99-088
04/2002 – present

Co-Primary Investigator: “Carotid Occlusion Surgical Study”; sponsored by the National Institutes of Health.
04/2002 – present

Past:

Primary Investigator: APLAUD (Blockade of the Receptor to Avoid Vascular Occlusion); sponsored by ---.
4/1997 – 6/1998

Primary Investigator: BRAVO (Blockade of the Receptor to Avoid Vascular Occlusion); sponsored by --- 5/1999 – 5/2001.

Primary Investigator: “The Effects of 2000 mg Citicoline on Clinical Outcome and the Evolution of Lesion Volume in Human Stroke”; sponsored by --- 6/1998 – 12/1999.

Primary Investigator: Trafermin in acute ischemic stroke; sponsored by --- Mountain View, CA and --- 3/1998 – 9/1998

Primary Investigator: Phase 2 Trial of Hu23F2G (LeukArrest) in Patients With Acute Ischemic Stroke; sponsored by --- 3/1997 – 4/1998.

Primary Investigator: “A Phase 3, Randomized, Double Blind, Placebo-Controlled Efficacy and Safety Study of Hu23F2G (LeukArrest) in Patients With Acute Ischemic Stroke”; 9/1998 – 7/2000.

Primary Investigator: “An International, Multicenter, Randomized, Double-Blinded, Placebo-Controlled, Parallel-Group Study to Assess Over 3 Months the Safety, Efficacy and Pharmacoeconomics of an 800 mg Loading Dose and Five 200 mg Maintenance Doses of GV150526 in the treatment of Patients with a Clinical Diagnosis of Stroke”; Glycine Antagonist in Neuroprotection for Patients with Acute Stroke (GAIN Americas); sponsored by ---1/1999 – 1/2000.

Primary Investigator: “A Double-Blind, Placebo Controlled, Multi-Center Study to

Evaluate the Safety and Efficacy of a 72-hour Infusion of CP-101,606 in Subjects With
Acute Ischemic Stroke in the Forebrain”; sponsored by ---10/1999 – 4/2001.
Co-Investigator: Improving CPP Management: Information Feedback and Nursing.
NIH PA-98-O3O
4/1999 – 4/2002